

Amendments to the Claims

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Claim 1 (Currently Amended): A method for hands free voice communications using a PDA comprising:  
sensing a bone conduction signal from a bone conduction sensor disposed within proximate an external auditory canal of a user such that at least one wall of the external auditory canal remains unobstructed to allow ambient sound into the external auditory canal and to avoid an occlusive effect;  
transmitting the sensed bone conduction signal from a transmitter to a PDA; and  
processing the sensed bone conduction signal at the PDA to create a processed audio signal.

Claim 2 (Original): The method of claim 1 wherein the bone conductor sensor is fitted to the contours of a posterior superior wall of the external auditory canal.

Claim 3 (Original): The method of claim 1 further comprising transmitting the processed audio signal from the PDA over a cellular transceiver.

Claim 4 (Original): The method of claim 1 further comprising transmitting the processed audio signal from the PDA to a receiver disposed within an earpiece worn by the user; and sending the processed audio signal from the receiver to a speaker disposed within the earpiece.

Claim 5 (Original): The method of claim 1 further comprising performing a voice recognition function using the processed signal.

Claim 6 (Original): The method of claim 1 further comprising performing a voice activation function using the processed signal.

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Claim 7 (Currently Amended): A method for hands free voice communications using a PDA comprising:

sensing an air conduction signal from an air conduction sensor nonocclusively disposed within an external auditory canal of a user ~~in a position proximate the posterior superior wall of the external auditory canal~~ such that at least one wall of the external auditory canal remains unobstructed;

transmitting the sensed air conduction signal from a transmitter located in an earpiece to a PDA; and

processing the sensed air conduction signal at the PDA to create a processed audio signal.

Claim 8 (Original): The method of claim 7 further comprising transmitting the processed audio signal from the PDA over a cellular transceiver.

Claim 9 (Original): The method of claim 7 further comprising transmitting the processed audio signal from the PDA to a receiver disposed within an earpiece worn by the user; and sending the processed audio signal from the receiver to a speaker disposed within the earpiece.

Claim 10 (Original): The method of claim 7 further comprising performing a voice recognition function using the processed signal.

Claim 11 (Original): The method of claim 7 further comprising performing a voice activation function using the processed signal.

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Claim 12 (Currently Amended): A method for hands free voice communications using a PDA comprising:

sensing an air conduction signal from an air conduction sensor ~~nonocclusively disposed~~  
~~within~~proximate an external auditory canal of a user;

sensing a bone conduction signal from a bone conduction sensor ~~disposed~~  
~~within~~proximate the external auditory canal of a user maintaining at least one wall  
of the external auditory canal as being unobstructed;

transmitting the air conduction signal and the bone conduction signal from a transmitter to a PDA; and

processing the bone conduction signal and the air conduction signal at the PDA to create a processed audio signal.

Claim 13 (Currently Amended): The method of claim 12 wherein the air conduction sensor is in a position proximate the posterior superior wall of the external auditory canal and that an opposite wall is unobstructed.

Claim 14 (Original): The method of claim 12 wherein the bone conduction sensor is fitted to the contours of a posterior superior wall of the external auditory canal.

Claim 15 (Original): The method of claim 12 further comprising transmitting the processed audio signal from the PDA over a cellular transceiver.

Claim 16 (Original): The method of claim 12 further comprising transmitting the processed audio signal from the PDA to a receiver disposed within an earpiece worn by the user; and sending the processed audio signal from the receiver to a speaker disposed within the earpiece.

Claim 17 (Original): The method of claim 12 further comprising performing a voice recognition function using the processed signal.

Claim 18 (Original): The method of claim 12 further comprising performing a voice activation function using the processed signal.

Claim 19 (Currently Amended): A system for hands free voice communication using the processing capabilities of a PDA comprising:

an earpiece housing;

an air conduction sensor adapted to be nonocclusively disposed within an external

auditory canal of a user and operatively connected to the earpiece housing

and capable of transducing air conduction signals;

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a bone conduction sensor adapted to be nonocclusively disposed within an external auditory canal of a user and operatively connected to the earpiece housing and capable of transducing bone conduction signals;

a transmitter operatively connected to the air conduction sensor and the bone conductor sensor and attached to the earpiece housing for simultaneously transmitting the air conduction signals and the bone conduction signals;

a PDA having a processor adapted for processing audio signals; and

a receiver electrically connected to the PDA for receiving the air conduction signals and the bone conduction signals.

Claim 20 (Original): The system of claim 19 further comprising a cellular transceiver electrically connected to the PDA for transmitting processed audio signals.

Claim 21 (Original): The system of claim 19 further comprising a speaker attached to the earpiece housing; a second receiver attached to the earpiece housing and the speaker; and a second transmitter operatively connected to the PDA adapted to transmit the processed audio signals to the second receiver.